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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,068	07/30/2001	Jorg Bobzin	09796503-013	3685
7590 05/25/2004				
Kevin W Gynn Sonnenschein Nath & Rosenthal 8000 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6404		EXAMINER TAMAI, KARL I		
		ART UNIT 2834		PAPER NUMBER
DATE MAILED: 05/25/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/856,068

Applicant(s)

BOBZIN, JORG

Examiner

Tamai IE Karl

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-- The MAILING DATE of this communication appears on the reverse with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 165-212 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 165-183, 185-189, 192, 193 and 197-199 is/are rejected.
- 7) ☒ Claim(s) 184, 190, 191, 194-196 and 200-211 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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DETAILED ACTION

The Allowance of claim 166, and the dependent claims therefrom, are withdrawn due to the new reference by Nozawa.

Specification

1. The examiner has amended the title of the application to "Dynamoelectric Machine with a Bent Air Core Coil Between Two Magnetic Bodies". The applicant's preliminary amendment commented on the title but did not amend the specification.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the coil rotating relative the curved field and the v shaped coils which are twisted relative to each other in the direction of movement must be shown or the feature canceled from Claim 166. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 165 is objected to because of the following informalities:

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- Claim 165, line 19, "angel" should be -- angle --.
- Claims 200-202 must depend from a previous claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 165, 168, 179, and 189 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 4349761) and Dunn et al. (Dunn) (US 6,617,748). Aoki teaches every aspect of the invention except the body with magnetic poles being backed by a return path material. Dunn teaches the magnets are mounted on flux return path plates 36, 38. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the machine of Aoki with the flux return plates of Dunn to mount the magnets to the housing and to provide efficient magnetic flux flow through the machine.

In regards to claim 168, Aoki teaches the two air gaps (axial and radial) approach each other and are connected by an edge.

6. Claims 166, 168, 175, and 178 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nozawa (JP 58-179,153) and Dunn et al. (Dunn) (US 6,617,748).

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Nozawa teaches every aspect of the invention except the magnet being backed with a magnetic return material. Dunn teaches the magnets are mounted on flux return path plates 36, 38. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the machine of Nozawa with the flux return plates of Dunn to mount the magnets to the housing and to provide efficient magnetic flux flow through the machine.

7. Claims 167, 170, 171, 173(167,170, 171), 174(167, 170, 171), 192, 197, and 199 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oba et al. (Oba)(JP 55-083,449) and Aoki (US 4349761). Oba teaches every aspect of the invention except the folded region of the coil being penetrated by a magnetic field on the folded region and/or on the outer edge, the coil moving relative to the field, and the V shaped coils which are overlapped and twisted to provide a compact coil design. Aoki teaches a magnetic pole on the edge of the folded region to provide efficient torque generation and the coil moving relative to the field. It would have been obvious to a person of ordinary skill in the art to construct the motor of Oba with a magnet on the outer edge, as taught by Aoki, to increase the efficiency of the motor, and with the coil rotating relative to the field, as taught by Aoki, because rearranging parts of an invention involves only routine skill in the art (see *In re Japikse*, 86 USPQ 70), and with the V-shaped coils overlapped to provide a compact coil design.

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8. Claims 168, 169, 172, 173 (168,169), 174 (168,169), 185, 186, and 187 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukami (US 4,604,540) and Fisher (5004944). Fukami teaches every aspect of the invention except the power supply being AC and the field moving relative to the coil. Fisher teaches that permanent magnet motors can operate from either AC or DC. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the device of Fukami with the power being AC to accommodate different power supplies (AC or DC), and because it is within the ordinary skill in the art to choose between known equivalents.

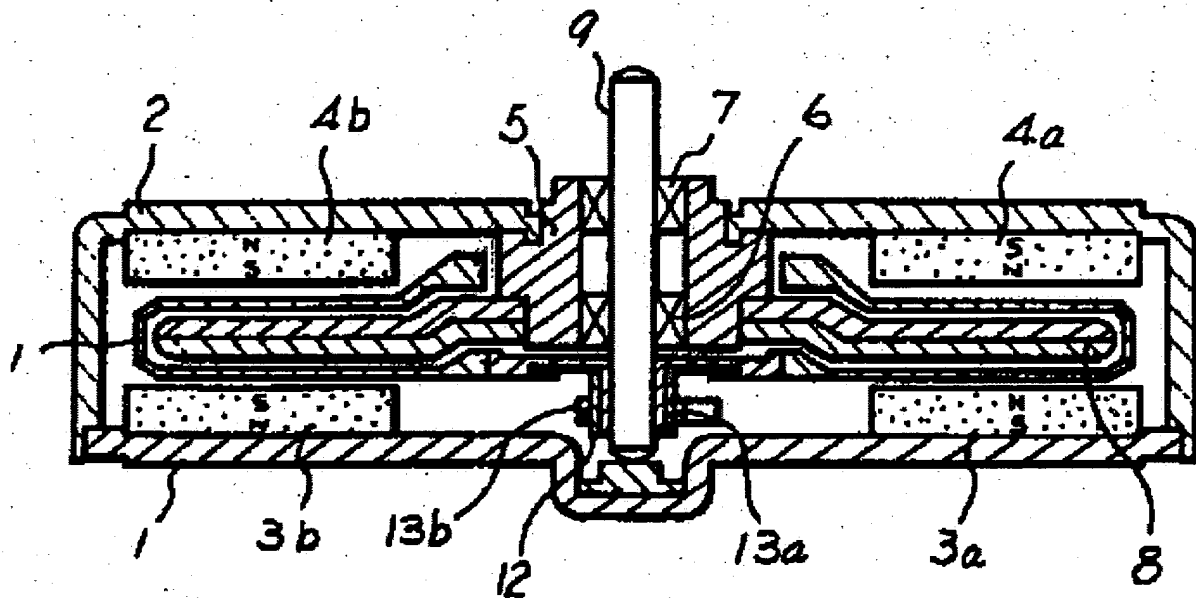
9. Claims 176 and 177 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nozawa (JP 58-179,153) and Dunn et al. (Dunn) (US 6,617,748). Nozawa and Dunn teach every aspect of the invention except the curve being irregular and elliptical. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the machine of Nozawa with the curve being irregular or elliptical to optimize the performance of the motor and because determining the range of the curvature is within the ordinary skill in the art (It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (see *In re Aller*, 105 USPQ 233)).

10. Claims 180, 181, and 183 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nozawa (JP 58-179,153) and Dunn et al. (Dunn) (US 6,617,748), in

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further view of Yamashina (JP 58-063067). Nozawa and Dunn teach every aspect of the invention except the first body having curve and straight boundary surfaces which merge at an angle of 180 degrees, and the first body being an uneven thickness.

Yamashina teaches the first member 8 having straight sides and a circularly curved end which merge at 180 degrees to construct a thin coreless motor. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the machine of Nozawa and Dunn with the straight and curved first member to provide a thin coreless motor.



11. Claim 182 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 4349761) and Dunn et al. (Dunn) (US 6,617,748), in further view of Rabe (US 4762053). Aoki and Dunn teach every aspect of the invention except three air gap section with 2 parallel and 1 90 degrees to the other. Rabe teaches a motor with an air

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gap having 3 sections, 2 parallel and 1 90 degrees to the others to provide efficient flux use in a small area. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the machine of Aoki and Dunn with the three air gap sections of Rabe to provide efficient use of the flux in the motor.

12. Claim 188 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukami (US 4,604,540) and Fisher (5004944), in further view of Oba et al. (Oba)(JP 55-83449). Fukami and Fisher teach every aspect of the invention except continuous magnetic pole at the outer edge. Oba teaches the permanent magnet on the inner member with a magnetic pole extending continuously around the outer edge to provide an efficient motor. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the device of Fukami and Fisher with the continuous pole inner magnet to provide an efficient motor.

13. Claim 193 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oba et al. (Oba)(JP 55-083,449) and Aoki (US 4349761), in further view of Morino et al. (Morino)(JP 61-251460). Oba and Aoki teach every aspect of the invention except the return path having a permanent magnet opposite the outer edge. Morino teaches a permanent magnet opposite the outer edge to provide torque to the axial end. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Oba and Aoki with the permanent magnet opposite the outer edge to generate torque at the outer edge as taught by Morino.

14. Claim 198 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oba et al. (Oba)(JP 55-083,449) and Aoki (US 4349761), in further view of Vaillant de Guelis et al. (Vaillant)(US 4924128). Oba and Aoki teach every aspect of the invention except the motion being linear. Vaillant teaches the equivalence of a core motor being linear or rotary. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Oba and Aoki with linear motion to provide either rotary or linear motion as taught by Vaillant, and because it is within the ordinary skill in the art to choose between known equivalents.

Allowable Subject Matter

15. Claim 184, 190, 191, 194, 195, 196, and 200-211 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

16. Applicant's arguments filed 4/22/03 have been fully considered but they are moot in view of the new grounds of rejection. The Applicant's argument that claim 167 (old claim 124) are not persuasive because Aoki and Rabe (cited in prior office action) teach that it is know to position on magnet opposite the axial end for efficient use of magnetic flux in a small space, and because Oba suggests in figure 5 that the outer axial edge

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has magnetic poles. The structure and motivation are supported by Morino (JP 61-251460), which teaches axial and radial magnets for high efficiency and power. The Applicant's argument regarding the speed of claim 168 (former claim 125) is not persuasive because the coil section are running at essentially the same speed because they are driven by the same current. The Applicant's argument regarding the coil side sections being on the same radius is not persuasive because the limitation is not claimed, because the limitation is shown in Fisher, and because a mere reorientation of the device to having a radial air gap rather than an axial air gap involves only routine skill in the art (see *In re Japikse*, 86 USPQ 70).

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (703) 872 - 9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karl I Tamai
PRIMARY PATENT EXAMINER
May 14, 2004



KARL TAMAI
PRIMARY EXAMINER